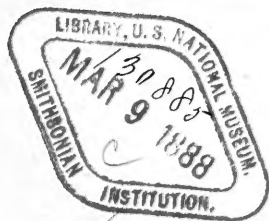


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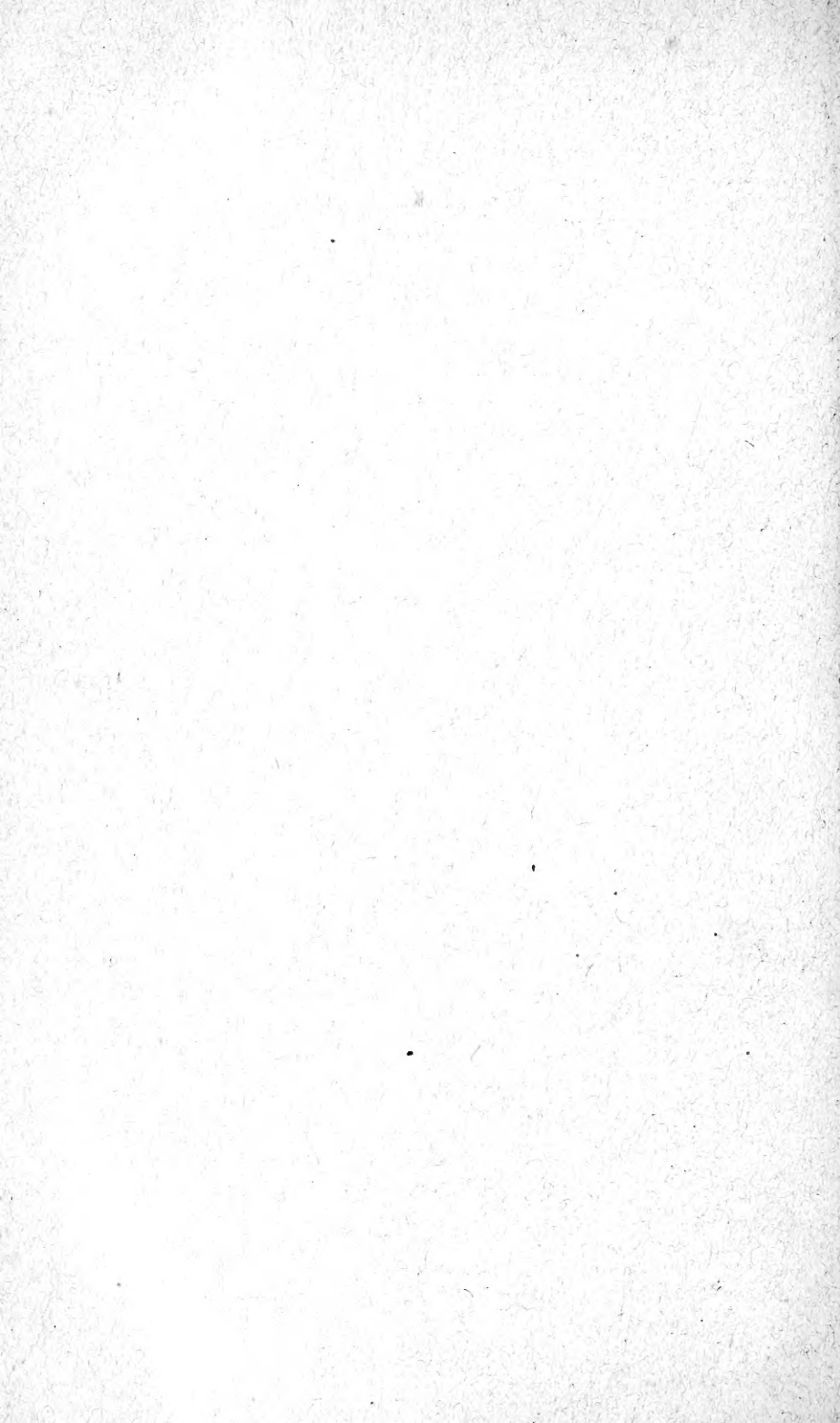


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**DREDGING STATIONS OF THE UNITED STATES FISH COMMISSION  
STEAMER FISH HAWK, LIEUT. Z. L. TANNER COMMANDING, FOR  
1880, 1881, AND 1882, WITH TEMPERATURE AND OTHER OBSERVA-  
TIONS.**

*Arranged for publication*

**By RICHARD RATHBUN.**

In the summer of 1880, the headquarters of the United States Fish Commission were established at Newport, R. I., and the steamer Fish Hawk, then newly constructed, made its dredging and trawling trips from there, whenever the weather permitted. The field of explorations for the summer included Narragansett Bay, Sakonnet River, and the regions to the northward, eastward, and southward of Block Island. In September and the first part of October, three trips were made by the Fish Hawk to the inner edge of the Gulf Stream slope, between latitudes  $40^{\circ} 05' 42''$  N. and  $39^{\circ} 46'$  N., and longitudes  $70^{\circ} 22' 06''$  W. and  $71^{\circ} 10'$  W., in depths of 64 to 487 fathoms, resulting in the discovery of a new and exceedingly rich fauna, both as regards fish and marine invertebrates. On her passage to Washington in November, the Fish Hawk also trawled off the mouth of Chesapeake Bay, in depths of 18 to 300 fathoms.

During the summers of 1881 and 1882, the headquarters of the Commission were at Wood's Holl, Mass. As the shallow waters of this region had been quite fully explored by the Commission in 1871 and 1875, very little time was expended in work near land; but advantage was taken of all pleasant weather to still further investigate the rich faunal region of the Gulf Stream slope, discovered the previous year. Seven trips were made to this region, in 1881, between latitudes  $39^{\circ} 40'$  N. and  $40^{\circ} 22'$  N., and longitudes  $69^{\circ} 15'$  W. and  $71^{\circ} 32'$  W., in depths of 43 to 782 fathoms. A line of dredgings and trawlings, at intervals of about four miles, was made from off Noman's Land to the Gulf Stream slope, in order to connect the inshore with the offshore stations; and a few trips were also made in Vineyard Sound, Buzzard's Bay, and off Chatham, Cape Cod, on, and in the vicinity of, Crab Ledge. Cod trawl-lines were set on most of the outside trips, for the purpose of catching fish that would not enter the beam-trawl.

In 1882, five deep-water trips, were made to the same region, extending the area of dredgings considerably beyond its former eastern and western limits. A few hauls of the dredge and beam-trawl were taken in Vineyard Sound, and one trip was made to the one-hundred fathom line, off the eastern side of Cape Cod. The most eastern haul on the Gulf Stream slope for 1882, was in latitude  $40^{\circ} 08'$  N. and longitude  $68^{\circ} 45'$  W.; and the most western in latitude  $39^{\circ} 31'$  N. and longitude  $72^{\circ} 06'$  W.; the deepest haul was in 787 fathoms. Cod-trawls were set on two of the trips only.

The temperatures of the air were taken, in part, with a Jas. Green, in part with a Signal Service, thermometer; the temperatures of the bottom and surface waters were obtained by means of Negretti and Zambra deep-sea thermometers. The bearings are all magnetic. As the bearings and latitudes and longitudes indicate only the points at which the dredge or trawl was lowered upon the bottom, the direction of the drift of the vessel and the distance gone over in dredging and trawling have been given in most cases, to show the extent of the hauls. The figures in the column of "Drift" indicate the distance of the drift in miles. The abbreviations in the column of "Apparatus used" have the following significations: D., dredge; R. D., rake-dredge; O. D., oyster-dredge; T., trawl; O. T., otter-trawl; B. T., Blake-trawl; Tan., tangles; C. T., cod-trawl.

The New York fishing schooner, Josie Reeves, Capt. F. M. Redmond, employed by the Fish Commission to look for the tile fish (*Lopholatilus chamaeleonticeps*) in the neighborhood of the one-hundred fathom line, south of Martha's Vineyard, made five stations in that region, which for convenience sake have been given numbers in the regular series from 1145 to 1149, inclusive. She used cod trawl-lines and lobster-pots.

Serial num.	Date.	Hour.	Latitude N.	Longitude W.	Locality.	Drift.	Depth in fathoms.	Nature of bottom.	Temperatures.			Apparatus used.
									Air.	Surf.	Bot- tom.	
	1880.		0	0	Narragansett Bay:							
770	Aug. 6	10 a. m.			Beaver Tail Light, SE. by S, 7 mile		8½	Sand and shells	68.0	66.5	62.5	D.
771	Aug. 6	10.30			Beaver Tail Light, SE. ½ S, 1 mile		8½	do	68.0	66.5	62.5	T.
772	Aug. 6	11.35			Beaver Tail Light, S. by E., 1½ miles		8	do	72.0	69.5	67.0	D.
773	Aug. 6	11.45			Beaver Tail Light, S. by E., 1½ miles		10½	Sand, mud, shells	72.0	69.5	67.0	D.
774	Aug. 6	1 p. m.			North end Dutch Island, south, ½ mile		12	Gravel, sand, mud	72.0	72.0	69.0	D.
775	Aug. 6	1.05			North end Dutch Island, south, 1 mile		27½	Sand, shells	72.0	67.5	58.5	D.
776	Aug. 7	9.45 a. m.			Fort Dumpling, N. W. by W. ½ W., ½ mile		27½	Sand, shells, gravel	72.0	67.5	58.5	T.
777	Aug. 7	10.20			Fort Dumpling, N. W. by W. ½ W., ½ mile		23½	Gravel, sand, broken shells	76.0	70.0	58.5	T.
778	Aug. 7	10.40			Fort Dumpling, N. E., 800 yards		22½	Gravel, sand, shells	78.0	68.0	57.5	D.
779	Aug. 7	11.05			Beaver Tail Light, red, 1 mile		18	do	79.0	69.0	57.5	T.
780	Aug. 7	11.30			Beaver Tail Light, W. N. W., 1 mile		16	Sand	73.0	69.0	57.0	T.
781	Aug. 7	12 m.			Beaver Tail Light, W. ½ N., 1½ miles		16	Sand, gravel, broken shells	68.0	70.0	60.0	D.
782	Aug. 12	9.30 a. m.			Off Newport, R. I.							
783	Aug. 12	10.15			Brenton's Reef Light-ship, N. by E., 1 mile		17½	do	70.0	70.0	55.0	T.
784	Aug. 12	10.50			Point Judith, W. ½ S., 4½ miles		20	Fine sand and broken shells	71.5	71.0	53.5	D.
785	Aug. 12	11.30			Brenton's Reef Light-ship, N. ½ W., 2½ miles		19½	Sand	72.0	71.0	54.5	T.
786	Aug. 12	2.35 p. m.			Brenton's Reef Light-ship, N. W. ½ W., 4½ miles		19	Mud and fine sand	74.0	71.0	53.5	D.
787	Aug. 12	3			Brenton's Reef Light-ship, N. N. W. ½ W., 4 miles		19	do	74.0	71.0	53.5	T.
788	Aug. 13	10.40 a. m.			Brenton's Reef Light-ship, N. N. W. ½ W., 6 miles		18	Fine sandy mud	70.0	71.0	54.0	D.
789	Aug. 13	11.05			Brenton's Reef Light-ship, N. N. W. ½ W., 5½ miles		17½	Sand and scallops	70.0	71.0	54.0	O. T.
790	Aug. 13	11.55			Point Judith, W. N. W. ¾ W., 8½ miles		16	Fine sand	70.0	71.0	54.5	T.
791	Aug. 13	1.10 p. m.			Point Judith, W. N. W., 12½ miles		20	Fine sandy mud	72.0	71.0	60.0	D.
792	Aug. 13	1.50			Point Judith, W. N. W., 12 miles		18	do	72.0	71.0	54.0	D.
793	Aug. 14	9 a. m.			Point Judith, W. N. W., 6 miles		19	Sand and broken shells	71.0	69.0	63.0	D.
794	Aug. 14	9.45			Point Judith, W. N. W. ¾ W., 5 miles		19	Sand	70.0	69.0	53.0	T.
795	Aug. 14	10.25			Point Judith, W. N. W. ¾ W., 4 miles		19	Fine sandy mud	71.0	69.0	53.0	D.
796	Aug. 14	11.00			Point Judith, W. N. W., 3½ miles		19	do	70.0	69.0	53.0	T.
797	Aug. 14	11.40			Point Judith, N. W. by W. ¾ W., 2½ miles		16½	Soft mud and coarse sand	70.0	68.5	55.0	D.
798	Aug. 14	12.10 p. m.			Point Judith, N. W. by W. ¾ W., 1½ miles		12½	Sand, gravel, few large stones	71.0	66.0	59.0	D.
799	Aug. 14	12.30			Point Judith, W. ½ N., 1½ miles		13	do	70.0	67.0	61.0	D.
800	Aug. 16	11.35 a. m.			Narragansett Bay: Poplar Point Lights, N. N. W. ¾ W., 2½ miles.		4	Sand	63.0	70.0	69.5	T.

*Dredging stations of the steamer Fish Hawk for 1880, 1881, and 1882—Continued.*

Serial num-ber	Date.	Hour.	Latitude N.	Longitude W.	Locality.	Drift.	Depth in fathoms.	Nature of bottom.	Temperatures.		Apparatus used.
									Air.	Surf. Bot- tom.	
1880.					Narragansett Bay:						
801 Aug. 16	12.20 p. m.		° "	° "	Popular Point Lights, W. by N., 2½ miles.		4½	Mud	65.0	71.0	68.0 T.
802 Aug. 16	2.15				Halfway Rock, W., ½ of a mile.		12½	do	68.0	70.5	62.0 T.
803 Aug. 16	3.25				Halfway Rock, N. by E., ½ E., 2½ miles.		20	Fine sandy mud	67.0	69.0	60.0 D.
804 Aug. 17	11.15 a. m.				Off Newport, R. I. (Brown's Ledge):						
805 Aug. 17	12.00 m.				Cuttyhunk Light, N.E. by E., 8½ miles	NW. by W., ½ mile.	11½	Rocks and sand.	68.0	66.0	59.0 D.
806 Aug. 17	12.00 m.				Close to No. 804	W. by S., ½ mile.	11½	Fine gravel	69.0	67.0	56.0 Tan.
807 Aug. 17	12.50 p. m.				Cuttyhunk Light, N.E. by E., 7½ miles	SW. by S., ½ mile.	14	do	70.0	67.0	60.0 D.
808 Aug. 17	1.20				Cuttyhunk Light, N.E. by E., 8 miles	SW. by S., ½ S., ½ mile.	13	do	70.0	67.0	60.0 D.
809 Aug. 17	1.55				Off Newport, R. I.; SW. of Brown's Ledge:	W. ½ S., ½ mile.	21½	Fine sand	70.0	67.0	52.0 D.
810 Aug. 17	2.15				Cuttyhunk Light, N.E. by E., 12 miles	W. NW., ½ mile.	21	Fine sand and gravel	70.0	67.0	52.0 T.
811 Aug. 17	2.20				Off Newport, R. I.; W. of Brown's Ledge:	SW., ½ mile	19½	Fine sandy mud	69.0	67.0	53.0 D.
812 Aug. 18	11.30 a. m.				Cuttyhunk Light, N.E. by E., 12½ miles	SW., ½ mile	28½	Sand	70.0	66.0	46.0 D.
813 Aug. 18	11.55				Off Block Island Light, N. NW., ½ W., 20 miles.	NW., ½ mile	28½	do	70.0	67.0	46.0 T.
814 Aug. 18	1.00 p. m.				Block Island Light, N. NW., ½ W., 20 miles.	SE., ½ mile	27½	Sand and gravel	72.0	72.0	46.0 T.
815 Aug. 18	2.15				Block Island Light, N. NW., ½ W., 18 miles.	SW., ½ mile	29	Fine sand	72.0	72.0	48.0 R. D.
816 Aug. 23	10.25 a. m.				Narragansett Bay:	SW., ½ mile	8½	Sand and broken shells	71.0	69.0	66.0 D.
817 Aug. 23	11.00				Brenton's Reef Light-ship, E. ½ S., 2½ miles.	SE., ½ mile	10	do	72.0	68.0	63.0 D.
818 Aug. 23	11.20				Brenton's Reef Light-ship, E. ½ N., 3 miles.	SE., ½ mile	9½	do	72.0	68.0	65.0 D.
819 Aug. 23	1.00 p. m.				Brenton's Reef Light-ship, E. ½ N., 3½ miles.	SE., ½ mile	6	Mud and broken shells.	74.0	73.0	70.0 T.
820 Aug. 23	1.40				South end Hope Island, SE. by E., ½ E., ½ mile.	W. SW., ½ mile.	5½	do	76.0	72.0	70.0 T.
821 Aug. 23	2.15				South end Hope Island, N. by E., ½ mile.	W. by S., ½ mile.	5	do	78.0	72.0	70.0 T.
822 Aug. 23	3.60				South end Hope Island, N. by E., ½ mile.	SW., ½ mile	4½	do	78.0	71.0	70.0 T.
823 Aug. 24	12.35				North of Block Island:	W., ½ mile	15½	Sand	74.0	65.0	60.0 D.
824 Aug. 24	12.50				North Light of Block Island, W. ½ S., 1½ miles.	NW., ½ mile	13	do	74.0	65.0	67.0 T.

825	Aug. 24	1. 30	North Light of Block Island, W. S.W. $\frac{3}{4}$ W., $\frac{1}{2}$ mile.	N.W., $\frac{1}{2}$ mile	13	do	73.0	67.9	60.0	O. T.
826	Aug. 24	2. 40	North Light of Block Island, W. N.W. $\frac{1}{2}$ W., $\frac{2}{3}$ miles.	S. S.W., $\frac{1}{4}$ mile	22	do	73.0	67.0	57.0	D.
827	Aug. 24	3. 05	North Light of Block Island, W. N.W. $\frac{1}{2}$ W., $\frac{2}{3}$ miles.	E. N.E., $\frac{1}{4}$ mile	20 $\frac{1}{2}$	do	71.0	67.0	57.0	B. T.
828	Aug. 25	12. 40	North Light of Block Island, S.W. by W. $\frac{3}{4}$ W., $\frac{2}{3}$ miles.	E. N.E., $\frac{1}{4}$ mile	15	do	70.0	66.0	60.0	D.
829	Aug. 27	10. 45 a. m.	Mouth of Sakonnet River, R. I.; Cormorant Rock, N.W. by N., $\frac{1}{2}$ mile	S. by E., $\frac{1}{2}$ mile	9	Gravel and stones	63.0	66.0	65.0	D.
830	Aug. 27	11. 15	West Island, S.E. by E., $\frac{1}{2}$ E., $\frac{3}{4}$ mile	N.E., $\frac{1}{2}$ E., $\frac{1}{4}$ mile	10 $\frac{1}{2}$	Sand and gravel	64.0	66.0	65.0	D.
831	Aug. 27	12. 30 p. m.	Sakonnet River, R. I.; North end of Gould Island, S.W. $\frac{1}{4}$ W., 350 yards.	S., $\frac{1}{2}$ mile	6	Dark, soft fetid mud	68.0	71.0	71.0	D.
832	Aug. 27	12. 45	North end of Gould Island, W., 150 yards.	S., $\frac{1}{2}$ mile	9	do	70.0	71.0	71.0	D.
833	Aug. 27	1. 00	South end of Gould Island, W., 100 yards	S., $\frac{1}{2}$ mile	6 $\frac{1}{2}$	do	70.0	71.0	71.0	R. D.
834	Aug. 27	1. 30	McCurry's Point, W. S. W., $\frac{1}{2}$ mile	N. by E., $\frac{1}{2}$ mile	11	do	63.0	73.0	71.0	R. D.
835	Aug. 27	1. 50	McCurry's Point, N. $\frac{1}{2}$ E., 1 $\frac{1}{2}$ miles	N., $\frac{1}{2}$ mile	3 $\frac{1}{2}$	Soft mud and broken shells	68.0	73.0	71.0	R. D.
836	Aug. 27	2. 25	Black Point, W. $\frac{1}{2}$ N., $\frac{1}{2}$ mile	S. S.W., $\frac{1}{2}$ mile	5	Sand	66.0	71.0	71.0	R. D.
837	Aug. 27	2. 45	Black Point, N.W. by W., $\frac{1}{2}$ W., $\frac{1}{4}$ mile	S. by E., $\frac{1}{2}$ mile	5	do	69.0	71.0	71.0	T.
838	Aug. 27	3. 15	Wood's Castle, W. by N., 1 mile.	S. by E., $\frac{1}{2}$ mile	5 $\frac{1}{2}$	do	66.0	70.0	68.0	T.
839	Aug. 31	9. 50 a. m.	Narragansett Bay; Dumpings, N. W., $\frac{1}{2}$ N., 300 yards.	S.W., $\frac{1}{2}$ mile	27 $\frac{1}{2}$	Gravel and sand	67.0	67.0	61.0	D.
840	Aug. 31	10. 05	Dumpings, N. by W., $\frac{1}{2}$ W., 100 yards.	S.W., $\frac{1}{2}$ mile	20 $\frac{1}{2}$	do	67.0	67.0	61.0	D.
841	Aug. 31	10. 45	Goat Island Light, N.E. by E., $\frac{1}{2}$ E., $\frac{3}{4}$ mile.	S., $\frac{1}{2}$ mile	21	Mud, sand, large stones	68.0	67.0	60.0	D.
842	Aug. 31	11. 00	Goat Island Light, E. N.E., $\frac{1}{2}$ E., $\frac{1}{2}$ mile.	N., $\frac{1}{2}$ mile	8	Sand	69.0	67.0	67.0	D.
843	Aug. 31	12. 00 m.	North end Dyer's Island, N.E., $\frac{1}{2}$ E., $\frac{3}{4}$ mile.	N., $\frac{1}{2}$ mile	14 $\frac{1}{2}$	do	69.0	69.0	63.0	T.
844	Aug. 31	12. 30 p. m.	North end Dyer's Island, S.E., $\frac{1}{2}$ E., $\frac{1}{2}$ mile.	W. S.W., $\frac{1}{2}$ mile	11 $\frac{1}{2}$	do	70.0	69.0	63.0	T.
845	Aug. 31	1. 00	Prudence Light, N. $\frac{1}{2}$ W., $\frac{1}{2}$ mile	E. N.E., $\frac{1}{2}$ mile	14 $\frac{1}{2}$	Gravel	70.0	69.0	64.0	T.
846	Aug. 31	1. 35	Prudence Light, N. by E., $\frac{1}{2}$ E., 1 $\frac{1}{2}$ miles	E. N.E., $\frac{1}{2}$ mile	14 $\frac{1}{2}$	Sandy mud and broken shells	70.0	68.0	63.0	R. D.
847	Aug. 31	2. 15	Half-Way Rock, N. $\frac{1}{2}$ W., 1 mile	N. N.E., $\frac{1}{2}$ mile	19 $\frac{1}{2}$	Mud	70.0	68.0	62.0	T.
848	Aug. 31	3. 00	Bishop's Rocks, E., $\frac{1}{2}$ mile.	N., $\frac{1}{2}$ mile	19 $\frac{1}{2}$	Mud	69.0	68.0	62.0	T.
849	Sept. 1	9. 20 a. m.	Fort Dumping, W. S.W., $\frac{1}{2}$ W., $\frac{1}{4}$ mile.	S.W., $\frac{1}{2}$ mile	20	Sand, gravel, stones	67.0	67.0	63.0	R. D.
850	Sept. 1	9. 40	Fort Dumping, E. N.E., $\frac{1}{2}$ E., $\frac{1}{2}$ mile	S. S.W., $\frac{1}{2}$ mile	14 $\frac{1}{2}$	Sand and shells	67.0	67.0	66.0	R. D.
851	Sept. 1	10. 00	Beaver Tail Light, S.W., $\frac{1}{2}$ W., $\frac{1}{2}$ miles	S. S.W., $\frac{1}{2}$ mile	13 $\frac{1}{2}$	Sand and gravel	66.0	67.0	66.0	R. D.
852	Sept. 1	10. 35	Beaver Tail Light, S. S.W., $\frac{1}{2}$ W., $\frac{2}{3}$ miles	S. S.W., $\frac{1}{2}$ mile	13 $\frac{1}{2}$	Sand and gravel	67.0	67.0	66.0	R. D.
853	Sept. 1	10. 50	Beaver Tail Light, S. W. by S., 2 miles	S., $\frac{1}{2}$ mile	2 $\frac{1}{2}$	Sand	67.0	67.0	66.0	T.
854	Sept. 1	11. 10	Beaver Tail Light, S.W., $\frac{1}{2}$ S., 1 $\frac{1}{2}$ miles	S., $\frac{1}{2}$ mile	4 $\frac{1}{2}$	Sand	68.0	67.0	67.0	T.
855	Sept. 1	11. 40	Beaver Tail Light, S.W. by S., $\frac{1}{2}$ miles	S., $\frac{1}{2}$ mile	6	Sand	69.0	67.0	67.0	T.
856	Sept. 1	12. 05 p. m.	Beaver Tail Light, S.W., $\frac{1}{2}$ W., $\frac{1}{2}$ miles	S. S.E., $\frac{1}{2}$ mile	3 $\frac{1}{2}$	Sand	69.0	68.0	68.0	T.
857	Sept. 1	12. 35	Beaver Tail Light, W. S.W., $\frac{1}{2}$ W., $\frac{1}{2}$ mile.	S. E., $\frac{1}{2}$ mile	11	Sand, gravel, shells	69.0	68.0	67.0	R. D.
858	Sept. 1	1. 05	Beaver Tail Light, W. N.W., $\frac{1}{4}$ W., $\frac{1}{2}$ mile.	S.E., $\frac{1}{2}$ mile	19	Sand	69.0	63.0	66.0	R. D.
859	Sept. 3	11. 20 a. m.	Vineyard Sound; Cuttyhunk Light, N., $\frac{1}{2}$ W., 3 miles	E., $\frac{1}{2}$ mile	14	Coarse sand, broken shells	63.0	63.0	66.0	R. D.
860	Sept. 3	11. 55	Cuttyhunk Light, N., $\frac{1}{2}$ W., 3 miles	W., $\frac{1}{2}$ mile	17 $\frac{1}{2}$	Sand and mud	68.0	66.0	63.0	R. D.
861	Sept. 3	12. 20 p. m.	Cuttyhunk Light, N., $\frac{1}{2}$ W., 3 $\frac{1}{2}$ miles	W., $\frac{1}{2}$ mile	17 $\frac{1}{2}$	do	70.0	66.0	64.0	R. D.
862	Sept. 3	1. 55	Cuttyhunk Light, N., $\frac{1}{2}$ miles	S., $\frac{1}{2}$ mile	17	Sand	69.0	66.0	61.0	T.
863	Sept. 3	1. 40	Cuttyhunk Light, N., $\frac{1}{2}$ miles	S., $\frac{1}{2}$ mile	17	do	68.0	66.0	64.0	T.
864	Sept. 3	3. 00	Gray end Light, S.S.W., $\frac{1}{2}$ E., 3 $\frac{1}{2}$ miles	S., $\frac{1}{2}$ mile	18	Sand and mud	70.0	67.0	65.0	R. D.
865	Sept. 3	3. 00	Gray end Light, S.S.W., $\frac{1}{2}$ W., 5 $\frac{1}{2}$ miles	S., $\frac{1}{2}$ mile	13	Sand and broken shells	70.0	67.0	61.0	D.

## Dredging stations of the steamer Fish Hawk for 1880, 1881, and 1882—Continued.

Serial num.	Date.	Hour.	Latitude N.	Longitude W.	Locality.	Drift.	Depth in fathoms.	Nature of bottom.	Temperatures.		Apparatus used.
									Air.	Surf. Bot- tom.	
865	1880. Sept. 4	5.40 a.m.	40 05	70 23	Atlantic Ocean:	E.N.E. $\frac{1}{2}$	65	Compact fine sand and mud.	71.0	73.0	T.
866	Sept. 4	6.30	40 05 18	70 22 18	Off Martha's Vineyard	N.E. by E. $\frac{1}{2}$	65	Fine sand and mud	73.0	68.5	T.
867	Sept. 4	7.04	40 05 42	70 22 06	do	E.S.E. $\frac{1}{2}$	64	Compact hard sand and broken shells.	73.0	53.0	R. D.
868	Sept. 4	8.23	40 01 42	70 22 30	do	N.W. $\frac{3}{4}$	162	Fine sand and black specks.	75.0	47.0	T.
869	Sept. 4	9.27	40 02 18	70 23 06	do	N.N.E. $\frac{1}{2}$	192	Fine sand	80.0	50.0	T.
870	Sept. 4	10.59	40 02 36	70 22 58	do	W. by N. 1	155	Mud and fine sand	80.0	77.0	T.
871	Sept. 4	11.40	40 02 54	70 23 40	do	N.N.W. $\frac{3}{4}$	115	Mud and fine sand	84.0	76.5	T.
872	Sept. 4	12.45 p.m.	40 05 39	70 23 52	do	N.W. by N. $\frac{1}{2}$	86	Sand, gravel, shells, and sponges.	81.0	50.5	T.
873	Sept. 13	5.36 a.m.	40 02	70 57	do	N.W. by N. $\frac{1}{2}$	100	Soft sticky mud	68.0	51.0	T.
874	Sept. 13	6.26	40 00 00	70 57 00	do	N.W. $\frac{1}{2}$ mile	85	do	70.0	51.0	T.
875	Sept. 13	7.51	39 57 00	70 57 30	do	N.E. $\frac{1}{2}$ mile	126	do	70.0	53.0	T.
876	Sept. 13	8.45	39 57 00	70 56 00	do	N. $\frac{1}{2}$ mile	120	do	68.0	53.0	T.
877	Sept. 13	9.40	39 56 00	70 54 18	do	N.N.W. $\frac{3}{4}$ mile	126	do	71.0	57.0	T.
878	Sept. 13	11.00	39 55 00	70 54 15	do	N.W. $\frac{3}{4}$ mile	142	Mud	72.0	52.0	T.
879	Sept. 13	1.20 p.m.	39 49 30	70 54 00	do	N. by W. $\frac{3}{4}$ mile.	225	Sand and blue mud	73.0	42.0	T.
880	Sept. 13	3.12	39 48 30	70 54 00	do	W. by N. $\frac{1}{2}$ mile.	252	Mud	74.0	43.0	T.
881	Sept. 13	5.00	39 46 30	70 54 00	do	W.N.W. $\frac{1}{2}$ mile.	325	do	70.0	42.0	T.
882	Sept. 17	10.56 a.m.			Narragansett Bay:						
883	Sept. 17	11.35			Halfway Rock, N. N.E. $\frac{1}{2}$ E., 23 miles	SW. $\frac{1}{2}$ mile	12	Mud	68.0	67.0	T.
884	Sept. 17	2.10 p.m.			Halfway Rock, N.E. by N. $\frac{1}{2}$ miles	SW. $\frac{1}{2}$ mile	13	do	70.0	65.0	T.
885	Sept. 17	3.15			Hope Island, N.E. $\frac{1}{2}$ E., 200 yards	SW. $\frac{1}{2}$ mile	5	do	72.0	63.5	R. D.
					Gould Island, N. by E. $\frac{1}{2}$ E., $\frac{1}{2}$ mile.	S. $\frac{1}{2}$ mile	16	Mud and shells	71.0	69.0	O. T.
886	Sept. 21	12.49			Off Block Island:						
					South Light of Block Island, N. $\frac{1}{2}$ E., 51 miles.	N. $\frac{1}{2}$ mile	19	Shells and coarse gravel	67.0	62.0	D.
887	Sept. 21	1.30			South Light of Block Island, N. $\frac{1}{2}$ W., 53 miles.	W. $\frac{1}{2}$ mile	19	do	67.0	62.0	T.
888	Sept. 21	2.00			South Light of Block Island, N. by E., 6 miles.	W. $\frac{1}{2}$ miles	19	do	68.0	62.0	T.
889	Sept. 21	3.50			South Light of Block Island, W. $\frac{1}{2}$ S., 5 miles.	W.S.W. $\frac{1}{2}$ mile.	11	Hard sand and rocks	68.0	61.5	D.
890	Sept. 21	4.15			South Light of Block Island, W. $\frac{1}{2}$ S., 43 miles.	W.S.W. $\frac{1}{2}$ mile	11	do	68.0	61.5	D.
891	Oct. 2	6.00 a.m.	39 46 00	71 10 00	Atlantic Ocean, off Martha's Vineyard	N. $\frac{1}{2}$ mile	480?	Soft, brown mud	69.0	67.0	T.
892	Oct. 2	8.46	39 46 00	71 05 00	do	N.N.E., 2 miles	487	Soft, brown mud and small stone.	64.0	65.0	T.
893	Oct. 2	11.23	39 52 10	70 58 00	do	N. 1 mile	372	do	63.0	40.0	T.
894	Oct. 2	1.10 p.m.	39 53 00	70 58 30	do	N. $\frac{1}{2}$ miles	365	do	63.0	40.0	T.

	895	Oct. 2	3. 17	39 56 30	70 59 45	.....do	N. 1½ miles	238	Soft mud.	62.0	65.0	42.0	T.
	896	Nov. 16	9. 20 a. m.	37 26 00	74 19 00	Atlantic Ocean, off mouth of Chesapeake Bay.	W. N. W., ½ mile.	56	Sand, shells.	52.0	62.0	55.0	T.
	897	Nov. 16	10. 10	37 25 00	74 18 00	do	W., 1 mile	157½	Sand, mud	62.0	69.0	48.0	T.
	898	Nov. 16	11. 25	37 24 00	74 17 00	do	W., 1 mile	309	Mud	60.0	62.0	44.0	T.
	899	Nov. 16	1. 55 p. m.	37 22 00	74 29 00	do	S. W. ½ mile	57½	Sand	58.0	61.0	54.0	T.
	900	Nov. 16	4. 00	37 19 00	74 41 00	do	W., ½ mile	31	Sand	55.0	59.0	56.0	T.
	901	Nov. 16	7. 15	37 10 00	75 08 00	do	W., ½ mile	18	do	53.0	60.0	.....	T.
	902					Shallow water dredgings on the oyster beds, off Port Lookout, Potomac River, Virginia, by the Fish Hawk.							
	916					Atlantic Ocean, off Martha's Vineyard.							
	917	July 16	4. 10 a. m.	40 22 00	70 42 00	do	N. E., ¾ mile	44	Green mud	66.0	63.0	42.0	T.
	918	July 16	5. 33	40 20 24	70 41 30	do	N. N. E., 1 mile	46	do	67.0	63.0	42.0	T.
	919	July 16	7. 00	40 16 18	70 41 18	do	N. E., 1 mile	53	do	70.0	66.0	42.5	T.
	920	July 16	8. 20	40 13 00	70 41 51	do	W. by S., 1 mile	63	do	72.0	66.0	43.0	T.
	921	July 16	9. 40	40 07 48	70 43 54	do	W., 1 mile	67	do	73.0	70.0	52.0	T.
	922	July 16	10. 57	40 03 48	70 45 54	do	N. by W., 1 mile	71	Green mud and sand	76.0	72.0	52.0	T.
	923	July 16	12. 27 p. m.	40 01 24	70 46 00	do	W. N. W., ½ mile	104	Sand	74.5	72.0	52.0	T.
	924	July 16	1. 52	39 57 30	70 46 00	do	N. W., 2 miles	164	do	74.5	71.0	44.5	T.
	925	July 16	3. 35	39 55 00	70 47 00	do	N. W. by W., 1½ miles	229	Sand and mud	74.0	71.0	42.0	T.
	926	July 16	5. 24	39 56 00	70 46 00	do	N. W. ½ N., 2½ miles	199	do	74.0	71.0	44.0	T.
	927	July 20	10. 47 a. m.	.....	.....	Vineyard Sound:							
	928	July 20	11. 30	.....	.....	Menomasha Bight; Gay Head Light, W. by S. ¾ S., 2½ miles.	W. N. W., ½ mile	11	Sand	68.0	62.0	59.0	T.
	929	July 20	12. 35 p. m	.....	.....	Gay Head Light, W. ¾ S., 2½ miles.	W. by N., ¾ mile	10	do	69.0	62.5	60.0	T.
	930	July 20	1. 10	.....	.....	Off Quirk's Hole; Gay Head Light, S. by W., 4½ miles	SE. by S., ¾ mile	10	do	66.0	63.0	62.0	D.
	931	July 20	1. 42	.....	.....	Gay Head Light, S. by W., 4½ miles	S. ¾ E., ¾ mile	12	Sand and shells	65.0	63.0	62.0	D.
	932	July 20	2. 43	.....	.....	Off Robinson's Hole; Gay Head Light, S. W. by S. ¾ S., 5½ miles.	S. ¾ W., ½ mile	16	do	65.0	63.0	62.0	D.
	933	July 20	3. 30	.....	.....	Off Lackey's Bay; Tarpanin Cove Light, W. by S. ¾ S., 3 miles.	N. W. by W., ¾ mile	14	Rock	67.0	66.0	66.0	D.
	934	July 20	4. 10	.....	.....	West Chop Light, S. ¾ E., ¾ mile	E. N. E., 2½ miles	14	Stones	68.0	65.0	61.0	D.
	935	Aug. 4	8. 14 a. m.	29 45 00	69 44 45	Noboka Light, W. ¾ S., 1¼ miles.	N. N. W., 1 mile	9	Sand and gravel	68.0	67.0	67.0	T.
	936	Aug. 4	10. 43	39 46 30	69 47 00	Atlantic Ocean:	N. W. ¾ N., 2½ miles	782	Green mud and sand	72.0	70.0	39.5	T.
	937	Aug. 4	12. 45 p. m.	39 49 25	69 49 00	Off Martha's Vineyard	N. W. ¾ W., 2 miles	716	Green mud	78.0	71.0	39.5	T.
	938	Aug. 4	2. 44	39 51 00	69 49 15	do	N. ½ miles	616	Green mud and sand, with lumps of clay.	73.0	72.0	40.5	T.
	939	Aug. 4	4. 25	39 53 00	69 50 30	do	N. N. W., 2 miles	317	Green mud and sand	80.0	72.5	42.0	T.
	940	Aug. 4	5. 30	39 54 00	69 51 30	do	N. N. W., 1½ miles	264	do	78.0	73.0	47.0	T.
	941	Aug. 4	7. 45	40 01 00	69 56 00	do	N. N. W., ½ W., 2 miles	134	Hard sand and sponges	76.0	72.0	52.0	T.
	942	Aug. 9	6. 15 a. m.	40 01 00	71 12 30	do	W. N. W., 1½ miles	79	Hard sand and mud	74.0	71.0	52.0	T.
	943	Aug. 9	7. 10	40 00 00	71 14 30	do	S. W. by W., 2 miles	138	do	72.0	69.0	50.0	D.
						do	N. W. by N., 2½ miles	157	Mud, sand, and shells	76.0	70.0	49.0	D.

Dredging stations of the steamer *Fish Hawk* for 1880, 1881, and 1882—Continued.

Serial num.	Date.	Hour.	Latitude N.	Longitude W.	Locality.	Drift.	Depth in fathoms.	Nature of bottom.	Temperatures.			Apparatus used.
									Air.	Surf.	Bottom.	
944	1881. Aug. 9	8.27 a. m.	40 01 00	71 14 30	Atlantic Ocean: Off Martha's Vineyard	NW. by N., 1½ miles.	128	Mud, sand, and shells	73.0	70.0	51.0	T.
945	Aug. 9	12.05 p. m.	39 58 00	71 13 00	do	NW. by N., 2 miles.	207	Green mud and sand	75.0	71.0	44.0	T.
946	Aug. 9	2.00	39 55 30	71 14 00	do	NW. by W., 1½ miles.	247	do	75.5	71.0	47.0	T.
947	Aug. 9	4.00	39 53 30	71 13 30	do	WNW., 3 miles.	319	Sand and mud	75.0	70.0	44.0	T.
948	Aug. 13	5.29			Buzzard's Bay: Penikese Island east, 2 miles.	W.SW., 1 mile.	7	Black mud and shells	76.6	67.0	66.0	T.
949	Aug. 23	4.20 a. m.	40 03 00	70 31 00	Atlantic Ocean: Off Martha's Vineyard	N.NW., 2 miles.	160	Yellow mud	68.0	66.0	52.0	R.D.
950	Aug. 23	5.50	40 07 00	70 32 00	do	N.NW., 1½ miles.	71	Sand, shells, and mud	69.0	65.0	52.0	T.
951	Aug. 23	9.40	39 57 00	70 31 30	do	N.NW., 1½ miles.	225	Mud	78.0	67.5	41.0	T.
952	Aug. 23	11.18	39 55 00	70 28 00	do	NE. by N., 1½ miles.	396	Yellow mud and sand	82.0	68.0	40.0	T.
953	Aug. 23	2.30 p. m.	39 52 30	70 17 30	do	N.NW., 1½ miles.	724	Mud	77.0	68.0	39.5	T.
954	Aug. 23	4.50	39 53 00	70 18 30	do	N.NW., 2 miles.	651	Sand and mud	74.5	68.0	39.5	T.
955	Aug. 26	10.50 a. m.			Buzzard's Bay: Nye's Neck, E. by S., ¼ mile.	W. by S. ¼ S., ½ mile.	7	Sand	69.0	67.5	68.0	T.
956	Aug. 26	11.26			Nye's Neck, S.S.E. ¾ E., ½ mile.	W. by S., ¼ mile.	53	do	71.0	69.0	62.0	T.
957	Aug. 26	11.45			Nye's Neck, S.S.E. ¾ E., ½ mile.	W. ¾ N., ¼ mile.	6	Sand and stones	73.0	69.5	68.0	T.
958	Aug. 26	12.30 p. m.			Nye's Neck, S. by E. ¾ E., ½ mile.	W.SW., ¾ mile.	5	Sand, stones, shells	75.0	70.0	68.0	T.
959	Aug. 26	12.40			Nye's Neck, S. ¾ mile.	West ¾ mile.	5	do	72.0	69.0	68.0	T.
960	Aug. 26	1.10			Nye's Neck, S. ¾ E., ½ mile.	SW. by W., ¾ mile.	4½	do	72.5	69.5	68.0	T.
961	Aug. 26	1.52			Nye's Neck, NE. ¾ E., 2½ miles.	W. by S., ¾ mile.	8	Black mud	71.5	69.0	68.0	T.
962	Aug. 26	3.10			Woecket Island, NE. ¾ E., 1¼ miles.	W.NW., ¾ mile.	8	Black mud, sand	71.0	68.0	66.0	T.
963	Aug. 26	3.40			Woecket Island, SE ¾ S., 1 mile.	W.SW., ¾ mile.	8½	Brown mud	70.0	68.0	66.0	D.
964	Aug. 30	7.50 a. m.			Off Chatham, Cape Cod (Grab Lodge): Chatham Lights, NW. ¾ W., 5 miles.	S.S.E., ¾ mile.	10	Sand, gravel	65.0	61.0	55.0	D.
965	Aug. 30	8.15			Chatham Lights, NW. ¾ W., 6 miles.	SE. by E., ¾ mile.	15	do	65.0	61.0	53.0	D.
966	Aug. 30	8.40			Chatham Lights, NW. by W. ¾ W., 6½ miles.	SE. ¾ mile.	16	Sand, small stones	65.0	61.0	52.0	D.
967	Aug. 30	8.50			Chatham Lights, NW. by W. ¾ W., 6½ miles.	SE., ¾ mile.	16	Sand, gravel	66.0	61.0	52.0	D.
968	Aug. 30	9.00			Chatham Lights, NW. by W. ¾ W., 7¼ miles.	NW. by W., ¾ mile.	18	Gravel	66.0	61.5	50.5	D.
969	Aug. 30	9.10			Chatham Lights, NW. by W. ¾ W., 7 miles.	SE., ¾ mile.	18	Sand, pebbles	66.0	61.5	51.0	D.
970	Aug. 30	9.43			Chatham Lights, W.NW. ¾ W., 6 miles.	W.NW., ¾ mile.	13	do	67.0	61.0	54.0	D.
971	Aug. 30	10.05			Chatham Lights, W. ¾ N., 4½ miles.	S.S.E., ¾ mile.	11	Sand, gravel, pebbles	67.0	61.5	54.0	D.



	Aug. 30	10. 48		Chatham Lights, NW. by W. $\frac{3}{4}$ W., 7 $\frac{1}{2}$ miles	NE., $\frac{3}{4}$ mile .....	16	Sand, gravel, stones .....	67.0	62.0	D.
972	Aug. 30	11. 10		Chatham Lights, W.N.W., $\frac{1}{2}$ miles	W.S.W., $\frac{1}{2}$ mile .....	17	do .....	67.0	61.0	D.
973	Aug. 30	11. 30		Chatham Lights, W.N.W., $\frac{1}{4}$ W., 6 $\frac{1}{2}$ miles	W.S.W., $\frac{1}{8}$ mile .....	16	do .....	67.0	62.0	D.
974	Aug. 30	11. 45		Chatham Lights, W.N.W., $\frac{1}{4}$ W., 6 $\frac{1}{2}$ miles	N. $\frac{1}{2}$ W., $\frac{1}{8}$ mile .....	16	do .....	68.0	63.0	D.
975	Aug. 30	12. 00 m.		Chatham Lights, W.N.W., 6 miles	N. $\frac{1}{2}$ W., $\frac{1}{8}$ mile .....	16	do .....	68.0	61.0	D.
976	Aug. 30	12. 20 p. m.		Chatham Lights, W.N.W., 6 miles	W. by N., $\frac{1}{4}$ mile .....	17	do .....	70.0	64.0	D.
977	Aug. 30	12. 30		Chatham Lights, W.N.W., 6 miles	W. by N., $\frac{1}{8}$ mile .....	17	do .....	70.0	64.0	D.
978	Aug. 30	12. 40		Chatham Lights, W.N.W., $\frac{1}{4}$ W., 6 miles	W. by N., $\frac{1}{8}$ mile .....	16	Sand .....	70.0	61.0	D.
979	Aug. 30	1. 00		Chatham Lights, NW. by W. $\frac{1}{4}$ W., 6 $\frac{1}{2}$ miles	SW., $\frac{1}{8}$ mile .....	14	Sand, stones, pebbles .....	70.0	62.0	D.
980	Aug. 30	2. 10		Chatham Lights, W.N.W., 10 miles	S. $\frac{1}{2}$ W., 1 $\frac{1}{2}$ miles .....	43	Sand, gravel .....	65.0	63.5	T.
981	Aug. 30	2. 45		Off Chatham, Cape Cod	S. by W., 1 $\frac{1}{2}$ miles .....	42	do .....	65.0	63.5	T.
982	Aug. 30	3. 23		do	S. by E., $\frac{3}{4}$ mile .....	33	Sand .....	64.5	64.0	T.
983	Aug. 30	4. 07		do	S. $\frac{1}{2}$ W., $\frac{1}{2}$ mile .....	33	Mud and sand .....	64.0	63.5	T.
984	Aug. 30			Atlantic Ocean:						
985	Sept. 7	12. 55 p. m.		Off Martha's Vineyard	SW. by S., 1 $\frac{1}{2}$ miles .....	26	Sand .....	73.0	66.0	T.
986	Sept. 7	2. 00		do	S. $\frac{1}{2}$ W., 1 mile .....	28	do .....	73.0	67.0	T.
987	Sept. 7	2. 28		do	S. $\frac{1}{2}$ W., $\frac{1}{2}$ mile .....	28	do .....	73.0	67.0	R.D.
988	Sept. 7	3. 30		do	S. $\frac{1}{2}$ W., $\frac{1}{2}$ mile .....	30	do .....	73.0	67.0	R.D.
989	Sept. 7	4. 00		do	S. $\frac{1}{2}$ W., $\frac{1}{2}$ mile .....	30	do .....	73.0	67.0	T.
990	Sept. 7	5. 08		do	S. $\frac{1}{2}$ W., $\frac{1}{2}$ mile .....	34	Green mud and sand .....	71.5	66.0	T.
991	Sept. 7	6. 05		do	S. $\frac{1}{2}$ W., $\frac{1}{2}$ mile .....	34	do .....	70.0	66.0	T.
992	Sept. 7	7. 30		do	S. $\frac{1}{2}$ W., $\frac{1}{2}$ mile .....	36	do .....	69.0	65.0	T.
993	Sept. 7	8. 20		do	S. $\frac{1}{2}$ W., $\frac{1}{2}$ mile .....	39	Mud .....	69.0	65.0	T.
994	Sept. 7	8. 40		do	S. $\frac{1}{2}$ W., 2 miles .....	368	do .....	72.0	68.0	T.
995	Sept. 8	4. 50 a. m.		do	W.N.W., $\frac{1}{2}$ mile .....	368	Yellow mud and sand .....	72.0	68.0	T.
996	Sept. 8	6. 32		do	W.N.W., $\frac{1}{2}$ mile .....	346	do .....	75.0	67.5	R.D.
997	Sept. 8	7. 35		do	N. by W., 1 mile .....	335	Yellow mud .....	75.0	67.5	T.
998	Sept. 8	9. 03		do	N. $\frac{1}{2}$ W., 1 mile .....	302	Green mud .....	74.0	68.0	T.
999	Sept. 8	10. 34		do	N. $\frac{1}{2}$ W., 1 mile .....	266	do .....	73.0	68.0	R.D.
1000	Sept. 8	11. 48		do	N. $\frac{1}{2}$ W., $\frac{1}{2}$ mile .....					
(Dredges by steamer Lookout. Nos. 1006 to 1013, close off Gay Head; 1014 N. of Lucas Shoal, Vineyard Sound.)										
Atlantic Ocean:										
Off Martha's Vineyard										
1025	Sept. 8	1. 05 p. m.		do	N. $\frac{1}{2}$ E., 1 mile .....	216	do .....	71.0	69.0	T.
1026	Sept. 8	2. 55 p. m.		do	N. by E., 1 $\frac{1}{2}$ miles .....	182	Green mud, sand .....	69.0	69.0	T.
1027	Sept. 14	7. 23 a. m.		do	N. $\frac{1}{2}$ E., $\frac{1}{2}$ mile .....	93	Fine sand .....	61.0	63.0	T.
1028	Sept. 14	9. 01		do	N. $\frac{1}{2}$ E., $\frac{1}{2}$ mile .....	410	Yellow mud .....	66.5	66.0	T.
1029	Sept. 14	12. 13 p. m.		do	N. $\frac{1}{2}$ E., by N., 1 mile .....	458	Yellow mud, sand .....	72.0	68.0	T.
1030	Sept. 14	1. 52		do	N. by W., 1 $\frac{1}{2}$ miles .....	337	Yellow mud .....	65.0	66.0	R.D.
1031	Sept. 14	2. 54		do	NW by N., 1 $\frac{1}{2}$ miles .....	255	do .....	64.0	65.0	T.
1032	Sept. 14	4. 00		do	NW., $\frac{1}{2}$ mile .....	208	do .....	65.0	65.0	T.
1033	Sept. 14	4. 55		do	N. $\frac{1}{2}$ W., 2 miles .....	183	Sand, gravel .....	66.0	63.0	T.
1034	Sept. 14	5. 55		do	N. $\frac{1}{2}$ W., $\frac{1}{2}$ mile .....	146	Sand and yellow mud .....	66.0	62.0	T.
1035	Sept. 14	6. 56		do	N. $\frac{1}{2}$ W., $\frac{1}{2}$ mile .....	120	Sand .....	63.0	62.0	T.
1036	Sept. 14	7. 54		do	N. $\frac{1}{2}$ W., 1 $\frac{1}{2}$ miles .....	94	do .....	62.0	61.5	R.D.

*Dredging stations of the steamer Fish Hawk for 1880, 1881, and 1882—Continued.*

Serial num- ber.	Date.	Hour.	Latitude N.	Longi- tude W.	Locality.	Drift.	Depth in fathoms.	Nature of bottom.	Temperatures.		Apparatus used.
									Air.	Surf. Bot- tom.	
1037	1881. Sept. 15	8.00 a. m.	39 58	70 06	Off Gay Head, Martha's Vineyard; Atlantic Ocean; Gay Head Light, N.E. $\frac{1}{2}$ N., 4 miles.	N. by E., 1 mile.	16	Sand.			T.
1038	Sept. 21	6.55	39 58	70 06	Off Martha's Vineyard	N. by E., 2 miles	146	Sand and shells	67.0	47.0	T.
1039	Sept. 21	9.35	39 59	70 05	do	N. by E., 2 miles	130	do	66.5	50.0	T.
1040	Sept. 21	10.43	40 00	70 05	do	N. by E., 2 miles	93	do	64.0	66.0	D.
1041	Sept. 22	12.35 p. m.			Vineyard Sound, Mass.:	W. SW. $\frac{1}{2}$ mile	9	Sand and gravel	63.5	65.0	T.
1042	Sept. 22	1.17			West Chop Light, E. $\frac{1}{2}$ N., 1 $\frac{1}{2}$ miles.	W. by N., $\frac{1}{2}$ mile	6	do	63.5	65.0	T.
1043	Oct. 10	7.17 a. m.	38 39	73 11	Atlantic Ocean; Off the Capes of Delaware	NW. by N., 1 $\frac{1}{2}$ miles.	130	Sand.	63.5	49.0	T.
1044	Oct. 10	8.15	38 37	73 12	do	W. NW. $\frac{1}{2}$ mile.	224	Gray mud	65.0	42.5	T.
1045	Oct. 10	9.32	38 35	73 13	do	W. $\frac{1}{2}$ N., $\frac{1}{2}$ mile.	312	do	67.0	40.0	T.
1046	Oct. 10	11.14	38 33	73 18	do	W. NW. $\frac{1}{2}$ mile.	104	Sand	66.0	51.0	T.
1047	Oct. 10	12.15 p. m.	38 31	73 21	do	NW., 1 $\frac{1}{2}$ miles	156	do	69.0	43.0	T.
1048	Oct. 10	1.55	38 29	73 21	do	W., 2 miles	435	Mud	71.0	66.0	T.
1049	Oct. 10	3.30	38 28	73 22	do	N. NW., 2 miles	453	do	68.0	40.0	T.
1050	1882. Feb. 27	2.00 p. m.			Chesapeake Bay:						
1051	Feb. 27	2.15			Point No Point, N. NE., 1 $\frac{1}{2}$ miles.		3 $\frac{1}{2}$	Mud, shells, gravel	50.0	41.0	O. D.
1052	Feb. 27	2.30			Point No Point, N. by E., 1 mile		2	Mud, grass	50.0	41.0	O. D.
1053	Feb. 27	2.45			Point No Point, N. NE., $\frac{1}{2}$ mile		1	do	50.0	41.0	O. D.
1054	Feb. 27	2.50			Point No Point, N. by E., 1 $\frac{1}{2}$ miles.		2	Mud, shells, oysters	50.0	41.0	O. D.
1055	Feb. 28	10.40 a. m.			Point No Point, N. by E., 1 $\frac{1}{2}$ miles.		2	do	50.0	41.0	O. D.
1056	Feb. 28	10.55			Patuxent River, Maryland: Drum Point, N. E., $\frac{1}{2}$ mile.		6	Brown mud, shells	46.0	40.0	D.
1057	Feb. 28	12.00 m.			Drum Point, N. NE., $\frac{1}{2}$ mile		6	do	46.0	40.0	R. D.
1058	Feb. 28	12.10 p. m.			Chesapeake Bay: South end of Burden Island, E. by S., 1 $\frac{1}{2}$ miles.	W. NW. $\frac{1}{2}$ mile.	17-20	Brown mud	49.0	40.0	T.
1059	Feb. 28	12.30			South end of Burden Island, SE. by E. $\frac{1}{2}$ E., 2 miles.	W. NW., $\frac{1}{2}$ mile.	3-25	do	49.0	40.0	T.
1060	Feb. 28	4.40			South end of Burden Island, SE. $\frac{1}{2}$ E., 2 miles	W. NW. $\frac{1}{2}$ mile.	23-25	do	49.0	40.0	T.
1061	Mar. 2	11.20 a. m.			Smith's Point, S. SW., 2 miles	SE. by S., $\frac{1}{2}$ mile	7	Brown mud, shells	46.0	41.0	T.
1062	Mar. 2	11.40			Smith's Point Light, S. by W. $\frac{1}{2}$ W., 1 $\frac{1}{2}$ miles.	S., $\frac{1}{2}$ mile.	11-16	do	43.0	41.5	D.
1063	Mar. 2	1.35 p. m.			Smith's Point Light, SW. $\frac{1}{2}$ S., 1 $\frac{1}{2}$ miles.	S. by W., 1 mile	16-24	do	48.0	41.5	T.
1064	Mar. 2	2.17			South point Tangier Island, N. by E. $\frac{1}{2}$ E., 2 $\frac{1}{2}$ miles.	NE. by E. $\frac{1}{2}$ mile.	10	do	50.0	44.0	R. D.
1065	Mar. 2				South point Tangier Island, N. NW., 1 mile.	NE. by E., $\frac{1}{2}$ mile	20-24	do	50.0	42.0	R. D.

1005	Mar. 6	9.00 a.m.	Cherry-stone Light, E. by N., 2 miles	25-12	Sand	56.0	45.0	46.5	T.
1006	Mar. 6	9.20	Cherry-stone Light, E. by S., 3 miles	12-25	do	56.0	45.0	45.0	T.
1007	Mar. 6	9.40	Cherry-stone Light, SE. by E. $\frac{1}{2}$ E., 3 miles	12-29	do	56.0	45.0	47.0	T.
1008	Mar. 11	9.50 a.m.	Thomas Point Light, W. SW. $\frac{1}{2}$ W., 2 miles	14-9	Black mud	49.0	42.0	41.0	T.
1009	Mar. 11	10.20	Thomas Point Light, SW. by W. $\frac{3}{4}$ W., 2 miles	18	do	51.0	42.0	40.0	T.
1010	Mar. 11	10.45	Thomas Point Light, W. by S., 2 miles	15-10	do	45.0	42.0	42.0	T.
1011	Mar. 11	11.22	Thomas Point Light, W. NW. $\frac{1}{2}$ W., 2 miles	14-13	do	49.0	42.0	40.0	T.
1012	Mar. 11	12.00 p.m.	Thomas Point Light, NW. $\frac{1}{2}$ miles	16	do	50.0	42.0	42.0	R.D.
1013	Mar. 11	12.25 p.m.	Thomas Point Light, NW. by N., 2 miles	13	Black mud, shells	50.0	42.0	42.0	R.D.
1014	Mar. 11	1.10	Thomas Point Light, N. by W. $\frac{1}{2}$ W., $\frac{1}{2}$ miles	18-11	Black mud	51.0	43.0	41.0	T.
1015	Mar. 13	9.45 a.m.	Sandy Point Light, N. by W. $\frac{1}{2}$ W., $\frac{1}{2}$ miles	14-11	Mud	45.0	43.0	40.0	T.
1016	Mar. 13	10.15	Sandy Point Light, N. by W. $\frac{1}{2}$ W., $\frac{1}{2}$ miles	15	do	45.0	43.0	40.0	T.
1017	Mar. 13	10.55	Sandy Point Light, NW. $\frac{1}{2}$ W., $\frac{1}{2}$ miles	11-12	do	49.0	43.0	40.0	T.
1018	Aug. 2	7.30 a.m.	Naussett Lights, NW. $\frac{1}{2}$ N., 10 miles	55	Green mud, fine sand	72.0	63.0	37.0	T.
1019	Aug. 2	8.40	Naussett Lights, NW. by W. $\frac{1}{2}$ W., $\frac{1}{2}$ miles	61 $\frac{1}{2}$	Fine sand	69.0	63.5	37.0	T.
1020	Aug. 2	9.40	Naussett Lights, NW. by W. $\frac{1}{2}$ W., $\frac{1}{2}$ miles	55	do	69.0	61.5	37.0	T.
1021	Aug. 2	10.50	Naussett Lights, W. by S., $\frac{1}{2}$ miles	33 $\frac{1}{2}$	Coarse gravel and pebbles	69.0	59.0	39.0	T.
1022	Aug. 2	11.45	Cape Cod Light, NW. $\frac{1}{2}$ N., $\frac{1}{2}$ miles	28	Coarse gravel	70.0	59.0	40.0	T.
1023	Aug. 2	12.45 p.m.	Cape Cod Light, W. by N., 15 miles	83 $\frac{1}{2}$	Coarse sand	77.0	64.0	38.0	T.
1024	Aug. 2	2.20	Race Point Light, W. NW. $\frac{1}{2}$ W., 8 miles	37 $\frac{1}{2}$	Fine sand, green mud	78.0	62.5	38.0	T.
1025	Aug. 3	6.15 a.m.	Race Point Light, S. $\frac{1}{2}$ E., 2 miles	24 $\frac{1}{2}$	Fine sand	67.0	64.0	39.0	T.
1026	Aug. 3	7.00	Race Point Light, S. $\frac{1}{2}$ mile	34	Fine sand	74.0	64.0	39.5	T.
1027	Aug. 3	8.30	Cape Cod Light, S. SW. $\frac{1}{2}$ miles	44	Gray sand	84.0	62.5	39.0	T.
1028	Aug. 3	9.50	Cape Cod Light, SW. $\frac{1}{2}$ W., 9 miles	90	Coarse sand	92.5	62.0	38.0	T.
1029	Aug. 3	11.10	Cape Cod Light, SW. $\frac{1}{2}$ W., 14 miles	110	Gray mud	78.0	63.0	38.5	T.
1030	Aug. 3	11.50	Cape Cod Light, SW. $\frac{1}{2}$ W., 13 miles	110	do	81.5	62.0	38.5	T.
1031	Aug. 11	5.30 a.m.	Atlantic Ocean: Off Martha's Vineyard	65	Gray sand, broken shells	77.0	75.0	46.0	T.
1032	Aug. 11	6.54	do	202	Gray sand	79.0	75.0	41.0	T.
1033	Aug. 11	8.35	do	349	Blue mud, sand	82.0	75.0	40.0	T.
1034	Aug. 11	10.10	do	301	Blue mud	84.0	76.0	40.0	T.
1035	Aug. 11	11.55	do	321	Soft green mud	82.0	76.0	40.0	T.
1036	Aug. 11	1.39 p.m.	do	317	do	78.0	75.5	40.0	T.
1037	Aug. 11	3.10	do	158	Fine sand	76.0	75.5	45.0	T.
1038	Aug. 11	4.35	do	156	do	78.0	75.0	43.5	T.
1039	Aug. 18	11.06 a.m.	Vineyard Sound: Nobska Point Light, W. SW. $\frac{1}{2}$ W., 1 $\frac{1}{2}$ miles	6	Sand, gravel	76.0	72.0	71.5	T.
1100	Aug. 18	11.47	Nobska Point Light, W. SW. $\frac{1}{2}$ W., 1 $\frac{1}{2}$ miles	43	Sand, gravel, shells	77.0	72.0	71.5	T.

Dredging stations of the steamer Fish Hawk, for 1880, 1881, and 1882—Continued.

Serial num.	Date.	Hour.	Latitude N.	Longitude W.	Locality.	Drift.	Depth in fathoms.	Nature of bottom.	Temperatures.			Apparatus used.
									Air.	Surf.	Bot- tom.	
1882					Vineyard Sound:							
1101	Aug. 18	12.15 p. m.	o	o	Nobska Point Light, W. by S. 1½ miles.	N.E., 1 mile.	5	Sand, gravel, shells.	78.0	72.0	71.0	T.
1102	Aug. 18	1.40			East Chop Light, N.W. ¾ W., 2½ miles.	E. by S., ¾ mile.	5	Coarse sand.	73.0	70.0	69.0	T.
1103	Aug. 18	1.42			East Chop Light, N.W. by W., 2½ miles.	E. by S., ¾ mile.	5	do	70.0	70.0	69.0	T.
1104	Aug. 18	2.12			East Chop Light, W.N.W. ¾ W., 4 miles.	N. by W., ¾ W., ¾ mile.	8½	Shells.	79.0	70.0	69.0	T.
1105	Aug. 18	3.00			Cape Poge Light, S. by W., 4 miles.	N.E. by E., ½ E., 2 miles.	10	Coarse sand.	80.0	72.0	71.0	T.
1106	Aug. 18	3.35			Cape Poge Light, S. by W. ¾ W., 5½ miles.	N.E. by N., ¾ mile.	5	Sand, shells.	80.0	72.5	72.0	T.
1107	Aug. 22	6.00 a. m.	40 02	70 35	Off Martha's Vineyard	N.W., 1 mile.	116	Gray mud.	69.5	71.0	48.0	T.
1108	Aug. 22	6.55	40 02	70 37	do	N.W. ¾ mile.	101	Gray mud, fine sand.	69.5	71.0	48.0	T.
1109	Aug. 22	7.55	40 03	70 38	do	N.W.W., 1 mile.	89	Gray sand.	70.5	71.0	49.0	T.
1110	Aug. 22	9.16	40 02	70 35	do	E. by W., ¾ W., 1 mile.	100	Green mud, fine sand.	75.0	72.0	47.0	T.
1111	Aug. 22	10.45	40 01 33	70 35	do	N.N.E., ½ E., 1 mile.	124	Fine sand.	76.0	72.0	47.0	T.
1112	Aug. 22	12.43 p. m.	39 56	70 35	do	N.W. by N., 1 mile.	245	Green mud, sand.	72.0	72.0	43.0	T.
1113	Aug. 22	1.45	39 57	70 37	do	N., 1 mile.	192	Green mud.	75.0	72.0	43.0	T.
1114	Aug. 22	2.40	39 58	70 38	do	N. by W., 1 mile.	171	do	74.0	72.0	43.0	T.
1115	Aug. 22	3.38	39 59	70 41	do	N. by N., ¾ mile.	146	Green mud, sand.	75.0	72.5	45.0	R.D.
1116	Aug. 22	4.29	39 59	70 44	do	N.W. by W., 1 mile.	144	do	77.0	72.0	46.0	T.
1117	Aug. 22	5.30	40 02	70 45	do	N. by E., 1 mile.	89	Fine sand.	78.0	72.0	48.0	T.
1118	Aug. 22	6.20	40 03	70 45	do	N.N.W., ¾ mile.	70	do	74.0	72.0	43.0	T.
1119	Aug. 22	6.32 a. m.	40 08	68 45	do	N.E. ¾ N., ¾ mile.	97	Sand, broken shells.	68.0	65.0	48.0	T.
1120	Aug. 26	7.41	40 05	68 48	do	N.E. ¾ N., ¾ miles.	194	Fine sand, stones.	69.0	65.0	43.5	T.
1121	Aug. 26	9.05	40 04	68 49	do	W.N.W., 1 mile.	234	do	65.0	65.0	41.5	T.
1122	Aug. 26	10.28	40 02	68 50	do	N.W., 1 mile.	351	do	70.0	67.0	40.5	T.
1123	Aug. 26	12.00 m.	39 59 45	68 54	do	N.N.W., 1 mile.	787	Fine sand, green mud.	70.0	69.0	39.0	T.
1124	Aug. 26	4.01 p. m.	40 01	68 54	do	N.W. by N., 1 mile.	640	Fine sand, green mud, lime-stone nodules.	65.0	65.0	39.0	T.
1125	Aug. 26	5.45	40 03	68 56	do	N.W. by W., 1 mile.	291	Sand, mud.	65.0	64.0	40.0	T.
1126	Aug. 28	1.46 p. m.			Vineyard Sound, Menemsha Light:							
1127	Aug. 28	2.30			Gay Head Light-house, W.S.W., 2½ miles.	S.E. by E., ¾ mile.	14	Sand, black mud.	72.0	66.0	61.5	T.
1128	Aug. 28	3.10			Gay Head Light-house, W. by S., 3 miles.	E.S.E., ¾ mile.	10	Gray sand, mud.	66.0	64.0	61.0	D.
					Gay Head Light-house, W. ¾ S., 2½ miles.	S. by E., ¾ mile.	9	do	69.0	66.0	65.0	D.
					North of Noman's Land:							
1129	Sept. 2	2.00			Fishing Village, S., ½ mile.	N.E. by E., ¾ mile.	4	Sand, stones.	73.0	65.0	62.0	D.
1130	Sept. 2	2.13			Fishing Village, S. ¾ E., ½ mile.	N.W. by N., ¾ mile.	4	do	72.0	65.0	62.0	D.
1131	Sept. 2	2.29			Fishing Village, S.E. by E., ¾ mile.	E. by N., ¾ mile.	4	do	72.0	63.0	63.0	D.



**SCARCITY OF BLACKFISH—MORTALITY OF CODFISH.****By CHAS. C. LESLIE.**

[From letter to G. Brown Goode.]

For the past four or five years we have noticed the scarcity of blackfish in the summer, and especially this summer. The smacks here have not made their expenses for the past two months. I have just seen Capt. S. M. Corker, one of our expert blackfish fishermen, who has been in the business for thirty years. He tells me that he has never seen them so scarce as they are at present, and that in former years the fishermen were accustomed to catch enough to pay expenses during the summer. Captain Corker also tells me that about June 1 a vessel came into this port, and, according to the statement of her captain, she sailed through acres of codfish, floating belly up, between Hatteras and Cape Henry. The fish were not dead, but very weak.

CHARLESTON, S. C., *June 29, 1882.***SHAD FISHING ON THE SAINT JOHN'S RIVER.****By JOHN H. OSBORN.**

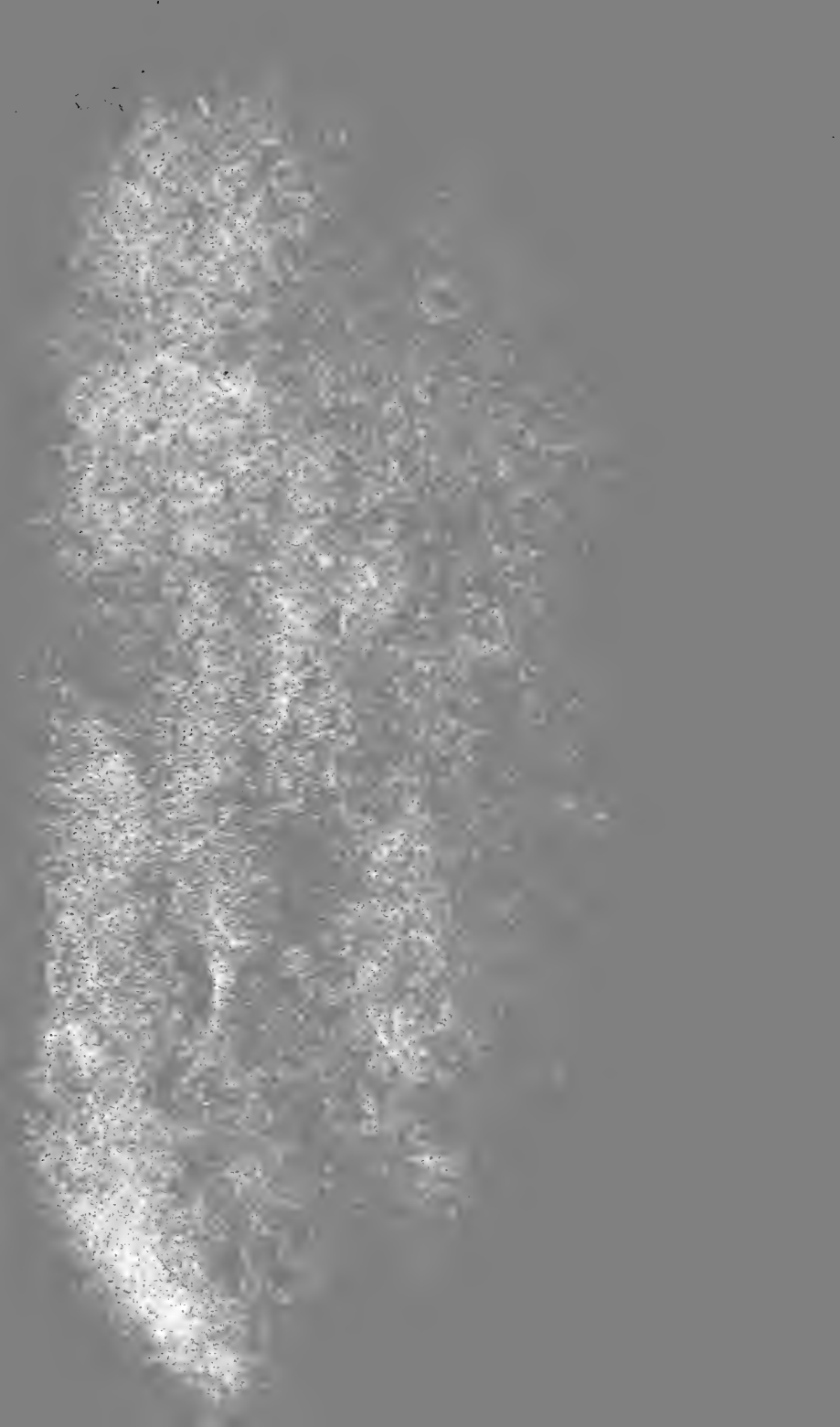
[From a letter to Prof. S. F. Baird.]

The past winter was very poor; the river was quite low and everything favorable for a good run of shad. I fished from January 12 until February 25. This is my sixth and last winter on the Saint John's. Our average catch nightly was 13 during January; during February it was 20. We had a good many northeast winds and many very cold nights, both of which stopped shad from running.

Several fishermen on the lower river have quit the business. Messrs. Melton & Tote, the largest fishery near Jacksonville, running 30 nets, did not pay expenses. Shad sold in Palatka and Jacksonville for 50 cents apiece. We sold a 1 we could catch at Sanford and Orange City. Could have sold ten times as many if we could have caught them. In the winter of 1876 I caught, on an average, 200 shad per night, with a 300-foot net, 20 meshes,  $2\frac{1}{2}$  inch mesh, rigged 3 meshes to a 5-inch span. Shad have gradually decreased since, and last winter I fished a 400-foot net, 25 meshes deep,  $2\frac{1}{4}$  inch mesh, rigged to 3 meshes on a 4-inch span. My net was rigged to catch fish and she did catch them, except shad, from a 5-inch herring up to 40 pound catfish and gars.

SORRENTO, FLA., *June 5, 1882.*



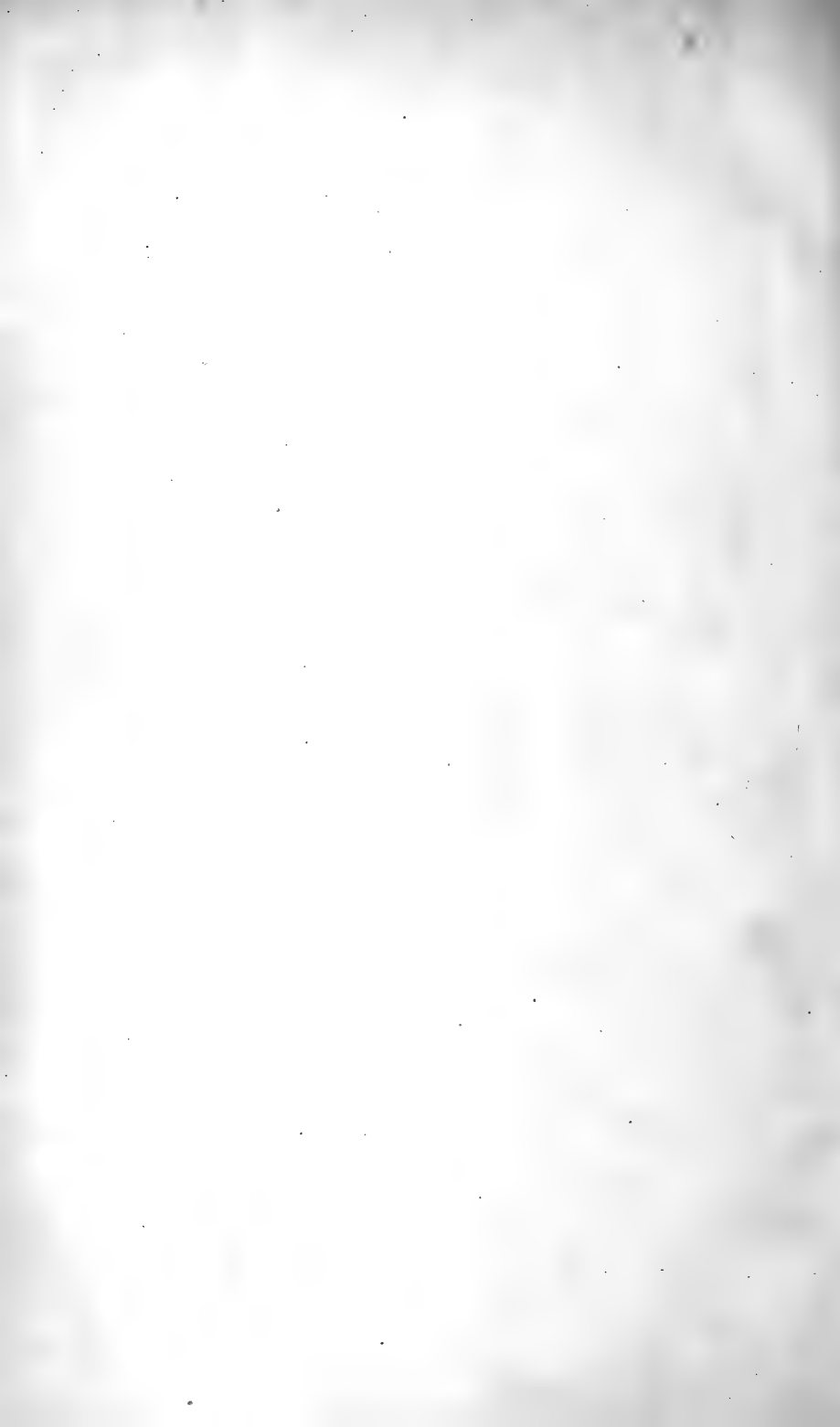


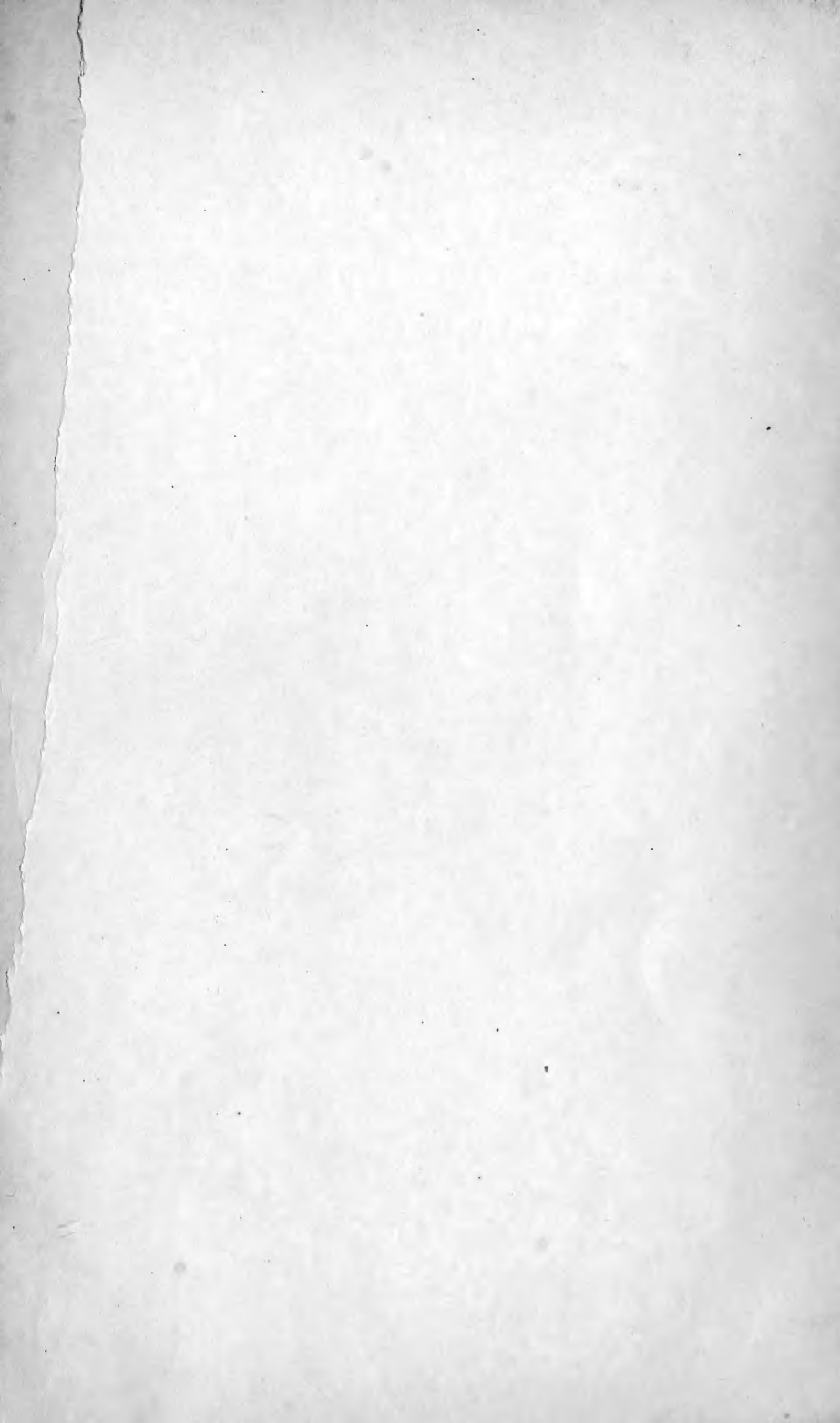


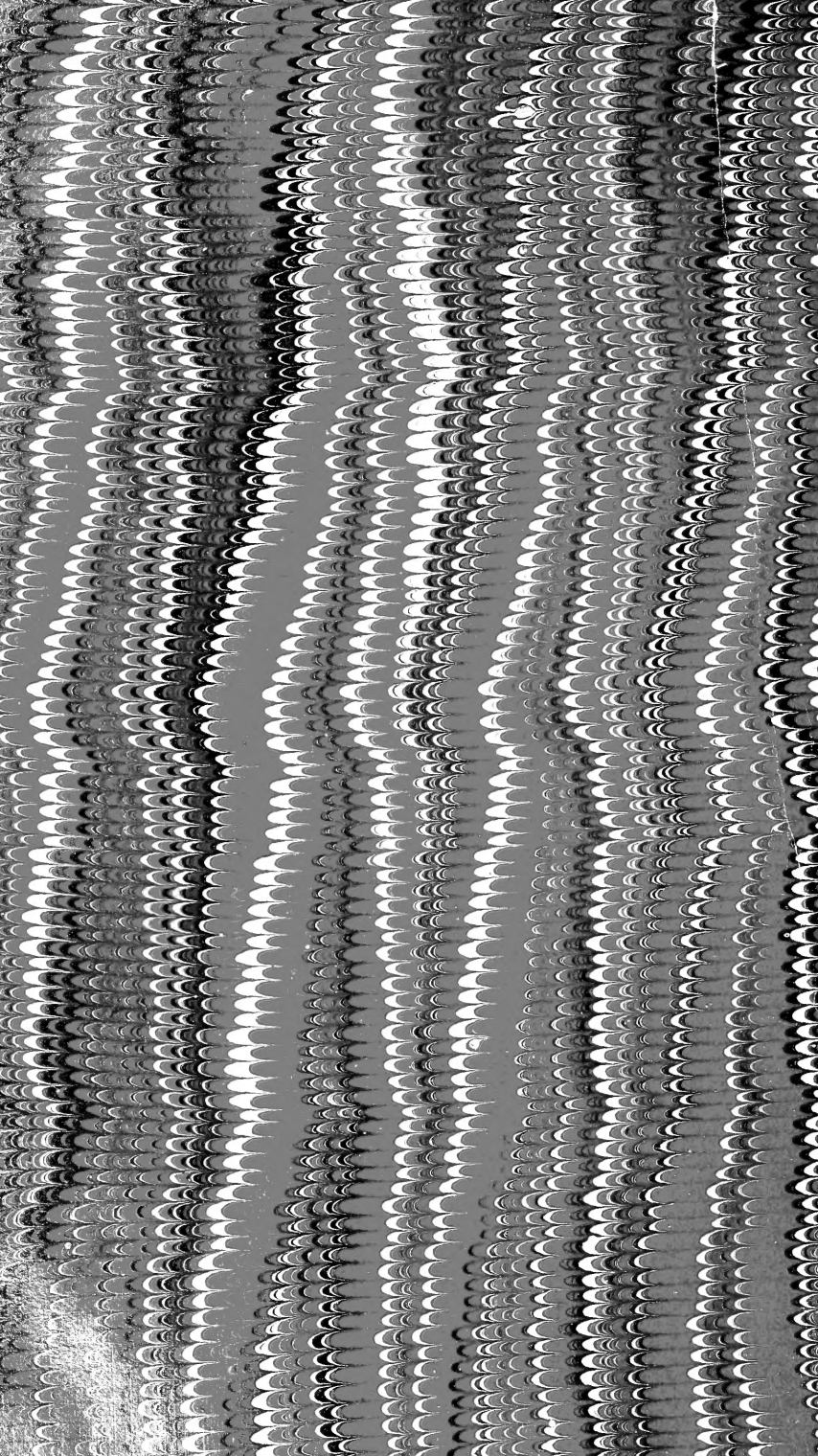


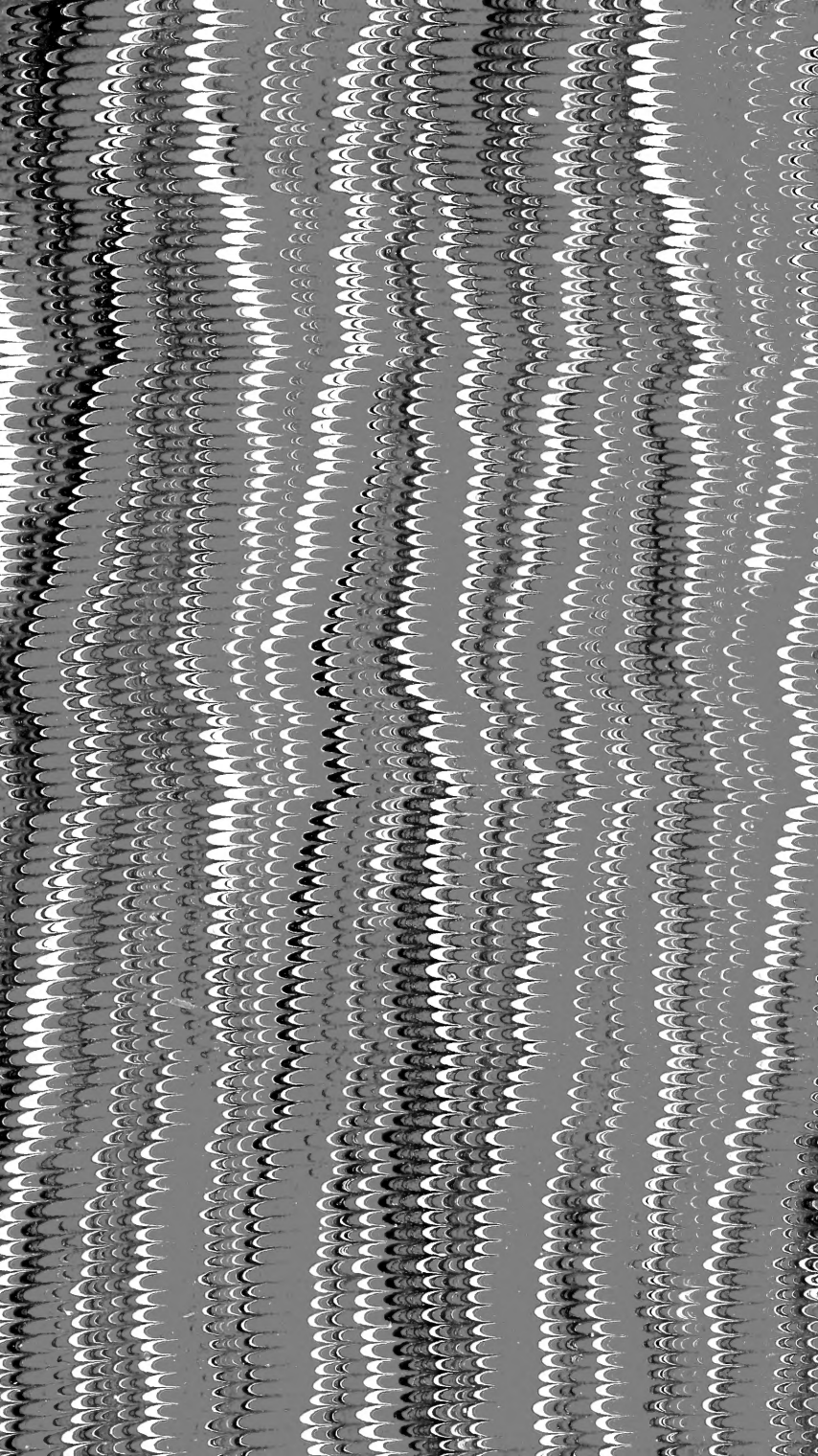












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